Reading. We will skip 3.9–3.11 for now. Read section 3.12 and start reading Chapter 4.

Projects. Get a good start on the project due Monday.

Practice Problems. Work out the solutions to the following problems in a notebook and check your answers in the back of your textbook. YOU WILL NOT TURN THESE PROBLEMS IN for a grade. They are only to help you study. Note however that these problems may appear verbatim on the weekly tests.

3.54–3.63, 3.68, 3.69, 4.1, 4.2, 4.3

Homework to turn in Tuesday, July 28 (at the start of class)

1. Let $Y$ denote a random variable that has a Poisson distribution with mean $\lambda = 5$. Find the following probabilities:
   (a) $P(Y = 7)$          (b) $P(Y \geq 7)$          (c) $P(Y < 7)$          (d) $P(Y \geq 7 | Y \geq 3)$ (conditional probability)

2. The number of calls coming into a call center averages 12 per minute.
   (a) What is the probability no calls arrive in a given one minute interval?
   (b) What is the probability that at least ten calls arrive in a given one minute interval?
   (c) What is the probability that at least 50 calls arrive in a given five minute interval?

3. Suppose that a UNT parking lot that has space for 40 cars is empty at 7 a.m. Suppose that beginning at 7:45 a.m. cars arrive at the parking lot according to a Poisson distribution with an average of 8 cars arriving per hour. Suppose that once a car arrives, it stays in the lot until the end of the day.
   (a) What is the probability that the lot fills up by 8:45 a.m.
   (b) What is the expected time that the lot will fill up. Hint: expected value.

4. Do problem 4.4. Be sure you show all your work since the answers are in the back. In part (a), sketch a graph of the cumulative distribution function.

5. Do problem 4.5. Be sure you show all your work since the answers are in the back.